The following listing of claims will replace all prior versions, and listings, of claims in the application:

## **Listing of Claims:**

1. (Previously Presented): A method of treating a patient having a cancer comprising administering to said patient a compound having the following formula:

$$R_1O$$
  $R_2$   $(I)$ 

wherein:

 $R_1$  is H;  $C_{1\cdot24}$  alkyl;  $C_{2\cdot24}$  alkenyl;  $C_{6\cdot24}$  aryl;  $C_{5\cdot20}$  heteroaromatic ring;  $C_{3\cdot20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N, or S;  $-C(O)R_6$ ;  $-C(O)OR_6$ ;  $-C(O)NHR_6$ ; or an amino acid radical or a dipeptide or tripeptide chain or mimetic thereof, wherein the amino acid radicals are selected from the group comprising Glu, Gly, Ala, Val, Leu, Ile, Pro, Phe, Tyr, Trp, Ser, Thr, Cys, Met, Asn and Gln, and which in each case is optionally terminated by  $-R_7$ ;

 $R_1$  can also be a  $P(O)(OR')_2$  group wherein R' is in each case independently H,  $C_{1-24}$  alkyl,  $C_{2-24}$  alkenyl,  $C_{6-24}$  aryl,  $C_{7-18}$  arylmethyl,  $C_{2-18}$  acyloxymethyl,  $C_{3-8}$  alkoxycarbonyloxymethyl,  $C_{3-8}$  S-acyl-2-thioethyl; saleginyl, t-butyl, phosphate or diphosphate;

R<sub>1</sub> can also be monophosphate, diphosphate, triphosphate or mimetics thereof;

 $R_2$  is

$$R_3$$
  $R_4$   $R_5$   $R_5$   $R_5$   $R_5$   $R_5$ 

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$$\begin{array}{c|c} CI & & & & \\ & & & \\ N & & & \\ R_3R_4N & & N \end{array}$$

 $R_3$  and  $R_4$  are in each case independently H;  $C_{1\cdot24}$  alkyl;  $C_{2\cdot24}$  alkenyl;  $C_{6\cdot24}$  aryl;  $C_{5\cdot18}$  heteroaromatic ring;  $C_{3\cdot20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N, or S;  $-C(O)R_6$ ;  $-C(O)OR_6$ ;  $-C(O)NHR_6$ ; or an amino acid radical or a dipeptide or tripeptide chain or mimetic thereof wherein the amino acids radicals are selected from the group comprising Glu, Gly, Ala, Val, Leu, Ile, Pro, Phe, Tyr, Trp, Ser, Thr, Cys, Met, Asn and Gln, and which in each case is optionally terminated by  $-R_7$ ;

 $R_6$  is, in each case, H,  $C_{1-20}$  alkyl,  $C_{2-20}$  alkenyl,  $C_{0-20}$  alkyl- $C_{6-24}$  aryl,  $C_{0-20}$  alkyl- $C_{5-20}$  heteroaromatic ring,  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N or S; and

 $R_7$  is, in each case,  $C_{1-20}$  alkyl,  $C_{2-20}$  alkenyl,  $C_{6-10}$  aryl,  $C_{5-20}$  heteroaromatic ring,  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N or S,  $-C(O)R_6$ ,  $-C(O)OR_6$ ; and

X and Y are each independently Br, Cl, I, F, OH,  $OR_3$  or  $NR_3R_4$  and at least one of X and Y is  $NR_3R_4$ ; or

a pharmaceutically acceptable salt thereof.

2. (Presently Amended): A method according to claim  $\underline{48}$  1, wherein at that least one of  $R_1$ ,  $R_3$  and  $R_4$  is other than H, and if  $R_3$  and  $R_4$  are both H and  $R_1$  is -C(O)R<sub>6</sub>, -C(O)OR<sub>6</sub> or -C(O)NHR<sub>6</sub>, then R<sub>6</sub> is other than H.

3. (Previously Presented): A method according to claim 1, wherein R<sub>2</sub> is of the formula:

4. (Previously Presented): A method of treating a patient with cancer, wherein the cancer cells are deficient in nucleoside or nucleobase transporter proteins, comprising administering to said patient a compound according to the following formula:

wherein:

 $R_1$  is H;  $C_{1-24}$  alkyl;  $C_{2-24}$  alkenyl;  $C_{6-24}$  aryl;  $C_{5-20}$  heteroaromatic ring;  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N, or S;  $-C(O)R_6$ ;  $-C(O)OR_6$ ;  $-C(O)NHR_6$ ; or an amino acid radical or a dipeptide or tripeptide chain or mimetic thereof wherein the amino acid radicals are selected from the group comprising Glu, Gly, Ala, Val, Leu, Ile, Pro, Phe, Tyr, Trp, Ser, Thr, Cys, Met, Asn and Gln, and which in each case is optionally terminated by  $-R_7$ ;

 $R_1$  can also be a  $P(O)(OR')_2$  group wherein R' is in each case independently H,  $C_{1-24}$  alkyl,  $C_{2-24}$  alkenyl,  $C_{6-24}$  aryl,  $C_{7-18}$  arylmethyl,  $C_{2-18}$  acyloxymethyl,  $C_{3-8}$  alkoxycarbonyloxymethyl, or  $C_{3-8}$  S-acyl-2-thioethyl, saleginyl, t-butyl, phosphate or diphosphate;

R<sub>1</sub> can also be monophosphate, diphosphate or triphosphate or mimetics thereof;

R<sub>2</sub> is

 $R_3$  and  $R_4$  are in each case independently H;  $C_{1-24}$  alkyl;  $C_{2-24}$  alkenyl;  $C_{6-24}$  aryl;  $C_{5-18}$  heteroaromatic ring;  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N, or S;  $-C(O)R_6$ ;  $-C(O)OR_6$ ;  $-C(O)NHR_6$ ; or an amino acid radical or a dipeptide or tripeptide chain or mimetic thereof wherein the amino acid radicals are selected from the group comprising Glu, Gly, Ala, Val, Leu, Ile, Pro, Phe, Tyr, Trp, Ser, Thr, Cys, Met, Asn and Gln, and which in each case is optionally terminated by  $-R_7$ ;

 $R_6$  is, in each case, H,  $C_{1-24}$  alkyl,  $C_{2-24}$  alkenyl,  $C_{0-20}$  alkyl- $C_{6-24}$  aryl,  $C_{0-20}$  alkyl- $C_{5-18}$  heteroaromatic ring,  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N or S;

 $R_7$  is, in each case,  $C_{1-20}$  alkyl,  $C_{2-20}$  alkenyl,  $C_{6-10}$  aryl,  $C_{5-10}$  heteroaromatic ring,  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected

from the group comprising O, N or S,  $-C(O)R_6$ ,

-C(O)OR<sub>6</sub>; and

X and Y are each independently Br, Cl, I, F, OH, OR<sub>3</sub> or NR<sub>3</sub>R<sub>4</sub> and at least one of X and Y is NR<sub>3</sub>R<sub>4</sub>; or

a pharmaceutically acceptable salt thereof.

- 5. (Previously Presented): A method according to claim 4, wherein at least one of  $R_1$ ,  $R_3$  and  $R_4$  is other than H, and if  $R_3$  and  $R_4$  are both H and  $R_1$  is  $-C(O)R_6$ ,  $-C(O)OR_6$ , or  $-C(O)NHR_6$  then  $R_6$  is other than H.
- 6. (Previously Presented): A method according to claim 4, wherein said cancer cells are deficient in one or more nucleoside or nucleobase transporter proteins that provide sodium-independent, bidirectional equilibrative transport.
- 7. (Previously Presented): A method according to claim 4, wherein said cancer cells are deficient in nucleoside or nucleobase transporter proteins that provide sodium-dependent, inwardly directed concentrative processes.
- 8. (Previously Presented): A method according to claim 7, wherein said cancer cells are deficient in nucleoside or nucleobase transporter proteins that provide sodium-dependent, inwardly directed concentrative processes.
- 9. (Previously Presented): A method according to claim 4, wherein said cancer cells are deficient in es transporter proteins, ei transporter proteins or both.
- 10. (Previously Presented): A method according to claim 4, wherein said cancer cells are deficient in cit transporter proteins, cib transporter proteins, cif transporter proteins, csg transporter proteins, cs transporter proteins, or combinations thereof.

11. (Previously Presented): A method according to claim 4, wherein R<sub>2</sub> is of the formula:

12. (Previously Presented): A method of treating patients with cancer comprising administering to said patient a compound of the following formula:

wherein:

 $R_1$  is H;  $C_{1-24}$  alkyl;  $C_{2-24}$  alkenyl;  $C_{6-24}$  aryl;  $C_{5-20}$  heteroaromatic ring;  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N, or S;  $-C(O)R_6$ ;  $-C(O)OR_6$ ;  $-C(O)NHR_6$ ; or an amino acid radical or a dipeptide or tripeptide chain or mimetic thereof wherein the amino acids radicals are selected from the group comprising Glu, Gly, Ala, Val, Leu, Ile, Pro, Phe, Tyr, Trp, Ser, Thr, Cys, Met, Asn and Gly, and which in each case is optionally terminated by  $-R_7$ ;

 $R_1$  can also be a  $P(O)(OR')_2$  group wherein R' is in each case independently H,  $C_{1-24}$  alkyl,  $C_{2-24}$  alkenyl,  $C_{6-24}$  aryl,  $C_{7-18}$  arylmethyl,  $C_{2-18}$  acyloxymethyl,  $C_{3-8}$  alkoxycarbonyloxymethyl,  $C_{3-8}$  S-acyl-2-thioethyl, saleginyl, t-butyl, phosphate or diphosphate;

R<sub>1</sub> can also be monophosphate, diphosphate, triophosphate or mimetics thereof;

 $R_2$  is

 $R_3$  and  $R_4$  are in each case independently H;  $C_{1-20}$  alkyl;  $C_{2-20}$  alkenyl;  $C_{6-10}$  aryl;  $C_{5-10}$  heteroaromatic ring;  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N, or S;  $-C(O)R_6$ ;  $-C(O)OR_6$ ;  $-C(O)NHR_6$ ; or an amino acid radical or dipeptide or tripeptide chain or mimetic thereof wherein the amino acids radicals are selected from the group comprising Glu, Gly, Ala, Val, Leu, Ile, Pro, Phe, Tyr, Trp, Ser, Thr, Cys, Met, Asn and Gln, and at least one amino acid is not Gly, and which in each case is optionally terminated by  $-R_7$ ;

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 $R_6$  is, in each case, H,  $C_{1-20}$  alkyl,  $C_{2-20}$  alkenyl,  $C_{0-20}$  alkyl- $C_{6-10}$  aryl,  $C_{0-20}$  alkyl- $C_{5-10}$  heteroaromatic ring,  $C_{3-20}$  non-aromatic ring optionally containing

1-3 heteroatoms selected from the group comprising O, N or S;

 $R_7$  is, in each case,  $C_{1-20}$  alkyl,  $C_{2-20}$  alkenyl,  $C_{6-10}$  aryl,  $C_{5-10}$  heteroaromatic ring,  $C_{3-20}$  non-aromatic

ring optionally containing 1-3 heteroatoms selected

from the group comprising O, N or S, -C(O)R<sub>6</sub>, -C(O)OR<sub>6</sub>; and

X and Y are each independently Br, Cl, I, F, OH, OR<sub>3</sub> or NR<sub>3</sub>R<sub>4</sub> and at least one of X and Y is NR<sub>3</sub>R<sub>4</sub>;

with the proviso that least one of  $R_1$ ,  $R_3$  and  $R_4$  is other than H, and if  $R_3$  and  $R_4$  are both H and  $R_1$  is  $-C(O)R_6$ ,  $-C(O)OR_6$ , or  $-C(O)NHR_6$  then  $R_6$  is other than H; or a pharmaceutically acceptable salt thereof;

wherein said compound is administered at least daily for a period of 2 to 10 days.

13. (Previously Presented): A method according to claim 12, wherein  $R_2$  is of the formula:

- 14. (Previously Presented): A method of treating a patient with cancer wherein the cancer is resistant to cytarabine, said method comprising administering to said patient a compound according to the following formula:
- $R_1$  is H;  $C_{1-24}$  alkyl;  $C_{2-24}$  alkenyl;  $C_{6-24}$  aryl;  $C_{5-20}$  heteroaromatic ring;  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N, or S;  $-C(O)R_6$ ;  $-C(O)NR_6$ ; or an amino acid radical or a dipeptide or tripeptide chain or mimetic thereof wherein the amino acids radicals are selected from the group comprising Glu, Gly, Ala, Val, Leu, Ile, Pro, Phe, Tyr, Trp, Ser, Thr, Cys, Met, Asn and Gln, and which in each case is optionally terminated by  $-R_7$ ;
- $R_1$  can also be a P(O)(OR')<sub>2</sub> group wherein R' is in each case independently H,  $C_{1-24}$  alkyl,  $C_{2-24}$  alkenyl,  $C_{6-24}$  aryl,  $C_{7-18}$  arylmethyl,  $C_{2-18}$  acyloxymethyl,  $C_{3-8}$  alkoxycarbonyloxymethyl,  $C_{3-8}$

8 S-acyl-2-thioethyl, saleginyl, t-butyl, phosphate or diphosphate;

R<sub>1</sub> can also be monophosphate, diphosphate, triphosphate or mimetics thereof;

 $R_2$  is

 $R_3$  and  $R_4$  are in each case independently H;  $C_{1-24}$  alkyl;  $C_{2-24}$  alkenyl;  $C_{6-24}$  aryl;  $C_{5-18}$  heteroaromatic ring;  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N, or S;  $-C(O)R_6$ ;  $-C(O)OR_6$ ;  $-C(O)NHR_6$ ; or an amino acid radical or a dipeptide or a tripeptide chain or mimetic thereof wherein the amino acids are selected from the group comprising Glu, Gly, Ala, Val, Leu, Ile, Pro, Phe, Tyr, Trp, Ser, Thr, Cys, Met, Asn and Gln, and which in each case is optionally terminated by  $-R_7$ ;

 $R_6$  is, in each case, H,  $C_{1-20}$  alkyl,  $C_{2-20}$  alkenyl,  $C_{0-20}$  alkyl- $C_{6-24}$  aryl,  $C_{0-20}$  alkyl- $C_{5-24}$  heteroaromatic ring,  $C_{3-24}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N or S;

 $R_7$  is, in each case,  $C_{1-24}$  alkyl,  $C_{2-24}$  alkenyl,  $C_{6-24}$  aryl,  $C_{5-24}$  heteroaromatic ring,  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N or S,  $-C(O)R_6$ ,  $-C(O)OR_6$ ; and

X and Y are each independently Br, Cl, I, F, OH, OR<sub>3</sub> or NR<sub>3</sub>R<sub>4</sub> and at least one of X and Y is NR<sub>3</sub>R<sub>4</sub>; or

a pharmaceutically acceptable salt thereof.

- 15. (Previously Presented): A method according to claim 14, wherein at least one of  $R_1$ ,  $R_3$  and  $R_4$  is other than H, and if  $R_3$  and  $R_4$  are both H and  $R_1$  is  $-C(O)R_6$ ;  $-C(O)OR_6$ , or  $-C(O)NHR_6$  then  $R_6$  is other than H.
- 16. (Previously Presented): A method according to claim 14, wherein  $R_2$  is of the formula:

17. (Previously Presented): A method of treating a patient with cancer comprising: determining that a compound enters cancer cells predominately by passive diffusion; and administering said compound to said patient; wherein said compound is a compound according to the formula:

wherein:

 $R_1$  is H;  $C_{1-24}$  alkyl;  $C_{2-24}$  alkenyl;  $C_{6-24}$  aryl;  $C_{5-24}$  heteroaromatic ring;  $C_{3-24}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N, or S;  $-C(O)R_6$ ;  $-C(O)NHR_6$ ; or an amino acid radical or dipeptide or tripeptide chain or mimetic thereof wherein the amino acid radicals are selected from the group comprising Glu,

Gly, Ala, Val, Leu, Ile, Pro, Phe, Tyr, Trp, Ser, Thr, Cys, Met, Asn and Gln, and which in each case is optionally terminated by -R<sub>7</sub>;

 $R_1$  can also be a  $P(O)(OR')_2$  group wherein R' is in each case independently H,  $C_{1-24}$  alkyl,  $C_{2-24}$  alkenyl,  $C_{6-24}$  aryl,  $C_{7-24}$  arylmethyl,  $C_{2-18}$  acyloxymethyl,  $C_{3-8}$  alkoxycarbonyloxymethyl,  $C_{3-8}$  S-acyl-2-thioethyl, saleginyl, t-butyl, phosphate or diphosphate;

R<sub>1</sub> can also be monophosphate, diphosphate, triphosphate or mimetics thereof;
 R<sub>2</sub> is

 $R_3$  and  $R_4$  are in each case independently H;  $C_{2-24}$  alkyl;  $C_{1-24}$  alkenyl;  $C_{6-24}$  aryl;  $C_{5-24}$  heteroaromatic ring;  $C_{3-24}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N, or S;  $-C(O)R_6$ ;  $-C(O)OR_6$ ;  $-C(O)NHR_6$ ; or an amino acid radical or dipeptide or tripeptide chain or mimetic thereof wherein the amino acid radicals are selected from the group comprising Glu, Gly, Ala, Val, Leu, Ile, Pro, Phe, Tyr, Trp, Ser, Thr, Cys, Met, Asn and Gln, and which in each case is optionally terminated by  $-R_7$ ;

 $R_6$  is, in each case, H,  $C_{1-24}$  alkyl,  $C_{2-24}$  alkenyl,  $C_{0-20}$  alkyl- $C_{6-24}$  aryl,  $C_{0-20}$  alkyl- $C_{5-24}$  heteroaromatic ring,  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N or S;

 $R_7$  is, in each case,  $C_{1-24}$  alkyl,  $C_{2-24}$  alkenyl,  $C_{6-24}$  aryl,  $C_{5-24}$  heteroaromatic ring,  $C_{3-20}$  nonaromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N or S,  $-C(O)R_6$ ,  $-C(O)OR_6$ ; and

X and Y are each independently Br, Cl, I, F, OH, OR<sub>3</sub> or NR<sub>3</sub>R<sub>4</sub> and at least one of X and Y is NR<sub>3</sub>R<sub>4</sub>; or

a pharmaceutically acceptable salt thereof.

- 18. (Previously Presented): A method according to claim 17, wherein at least one of  $R_1$ ,  $R_3$  and  $R_4$  is other than H, and if  $R_3$  and  $R_4$  are both H and  $R_1$  is  $-C(O)R_6$  or  $-C(O)OR_6$ , then  $R_6$  is other than H.
- 19. (Previously Presented): A method according to claim 17, wherein  $R_2$  is of the formula:

$$O = \begin{bmatrix} N R_3 R_4 \\ N \\ N \end{bmatrix}$$

20. (Previously Presented): A method of treating a patient with cancer comprising: administering to said patient a compound which has been determined to enter the cancer cells predominately by passive diffusion, wherein said compound is a compound according to the formula:

wherein:

 $R_1$  is H;  $C_{1-24}$  alkyl;  $C_{2-24}$  alkenyl;  $C_{6-24}$  aryl;  $C_{5-24}$  heteroaromatic ring;  $C_{3-24}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N, or S;  $-C(O)R_6$ ;  $-C(O)OR_6$ ;  $-C(O)NHR_6$ ; or an amino acid radical or dipeptide or tripeptide chain or mimetic thereof wherein the amino acid radicals are selected from the group comprising Glu, Gly, Ala, Val, Leu, Ile, Pro, Phe, Tyr, Trp, Ser, Thr, Cys, Met, Asn and Gln, and which in each case is optionally terminated by  $-R_7$ ;

 $R_1$  can also be a P(O)(OR')<sub>2</sub> group wherein R' is in each case independently H,  $C_{1-24}$  alkyl,  $C_{2-24}$  alkenyl,  $C_{6-24}$  aryl,  $C_{7-18}$  arylmethyl,  $C_{2-18}$  acyloxymethyl,  $C_{3-8}$  alkoxycarbonyloxymethyl,  $C_{3-8}$  S-acyl-2-thioethyl, saleginyl, t-butyl, phosphate or diphosphate;

R<sub>1</sub> can also be monophosphate, diphosphate, triphosphate or mimetics thereof;

R<sub>2</sub> is

 $R_3$  and  $R_4$  are in each case independently H;  $C_{1-24}$  alkyl;  $C_{2-24}$  alkenyl;  $C_{6-24}$  aryl;  $C_{5-24}$  heteroaromatic ring;  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N, or S;  $-C(O)R_6$ ;  $-C(O)OR_6$ ;  $-C(O)NHR_6$ ; or an amino acid radical or dipeptide or tripeptide chain or mimetic thereof wherein the amino acid radicals are selected

from the group comprising Glu, Gly, Ala, Val, Leu, Ile, Pro, Phe, Tyr, Trp, Ser, Thr, Cys, Met, Asn and Gln, and which in each case is optionally terminated by -R<sub>7</sub>;

 $R_6$  is, in each case, H,  $C_{1-24}$  alkyl,  $C_{2-24}$  alkenyl,  $C_{0-20}$  alkyl- $C_{6-24}$  aryl,  $C_{0-20}$  alkyl- $C_{5-20}$  heteroaromatic ring,  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N or S;

 $R_7$  is, in each case,  $C_{1-24}$  alkyl,  $C_{2-24}$  alkenyl,  $C_{6-24}$  aryl,  $C_{5-20}$  heteroaromatic ring,  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprisingN or S,  $-C(O)R_6$ ,  $-C(O)OR_6$ ; and

X and Y are each independently Br, Cl, I, F, OH, OR<sub>3</sub> or NR<sub>3</sub>R<sub>4</sub> and at least one of X and Y is NR<sub>3</sub>R<sub>4</sub>; or a pharmaceutically acceptable salt thereof.

- 21. (Previously Presented): A method according to claim 20, wherein at least one of  $R_1$ ,  $R_3$  and  $R_4$  is other than H, and if  $R_3$  and  $R_4$  are both H and  $R_1$  is  $-C(O)R_6$ ;  $-C(O)OR_6$  or  $-C(O)NHR_6$  then  $R_6$  is other than H.
- 22. (Previously Presented): A method according to claim 20, wherein  $R_2$  is of the formula:

$$O = N$$

$$N$$

$$R_{5}$$

- 23. (Previously Presented): A method of treating a patient with cancer resistant to troxacitabine, comprising administering to said patient a troxacitabine derivative having a greater lipophilicity than troxacitabine.
- 24. (Previously Presented): A method according to claim 23, wherein said derivative is a compound of the following formula:

$$R_1O$$
 $R_2$ 
 $O$ 
 $R_2$ 
 $O$ 
 $O$ 

wherein:

is H;  $C_{1-24}$  alkyl;  $C_{2-24}$  alkenyl;  $C_{6-24}$  aryl;  $C_{5-24}$  heteroaromatic ring;  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N, or S;  $-C(O)R_6$ ;  $-C(O)OR_6$ ;  $-C(O)NHR_6$ ; or an amino acid radical or dipeptide or tripeptide chain or mimetic thereof wherein the amino acid radicals are selected from the group comprising Glu, Gly, Ala, Val, Leu, Ile, Pro, Phe, Tyr, Trp, Ser, Thr, Cys, Met, Asn and Gln and the amino acid chain contains at least one amino acid other than Gly, and which in each case is optionally terminated by  $-R_7$ ;

 $R_1$  can also be a  $P(O)(OR')_2$  group wherein R' is in each case independently H,  $C_{1-24}$  alkyl,  $C_{2-24}$  alkenyl,  $C_{6-24}$  aryl,  $C_{7-24}$  arylmethyl,  $C_{2-17}$  acyloxymethyl,  $C_{3-8}$  alkoxycarbonyloxymethyl,  $C_{3-8}$  S-acyl-2-thioethyl, saleginyl, t-butyl, phosphate or diphosphate;

R<sub>1</sub> can also be monophosphate, diphosphate, triphosphate or mimetics thereof;

R<sub>2</sub> is

$$R_5$$
 $R_5$ 
 $R_5$ 

 $R_3$  and  $R_4$  are in each case independently H;  $C_{1-20}$  alkyl;  $C_{2-20}$  alkenyl;  $C_{6-10}$  aryl;  $C_{5-10}$  heteroaromatic ring;  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N, or S;  $-C(O)R_6$ ;  $-C(O)OR_6$ ;  $-C(O)NHR_6$ ; or an amino acid radical or dipeptide or tripeptide chain or mimetic thereof wherein the amino acid radicals are selected from the group comprising Glu, Gly, Ala, Val, Leu, Ile, Pro, Phe, Tyr, Trp, Ser, Thr, Cys, Met, Asn and Gln and the amino acid chain contains at least one amino acid other than Gly, and which in each case is optionally terminated by  $-R_7$ ;

 $R_6$  is, in each case, H,  $C_{1-20}$  alkyl,  $C_{2-20}$  alkenyl,  $C_{0-20}$  alkyl- $C_{6-10}$  aryl,  $C_{0-20}$  alkyl- $C_{5-10}$  heteroaromatic ring,  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N or S;

 $R_7$  is, in each case,  $C_{1-20}$  alkyl,  $C_{2-20}$  alkenyl,  $C_{6-10}$  aryl,  $C_{5-10}$  heteroaromatic ring,  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N or S,  $-C(O)R_6$ ,  $-C(O)OR_6$ , and

X and Y are each independently Br, Cl, I, F, OH, OR<sub>3</sub> or NR<sub>3</sub>R<sub>4</sub> and at least one of X and Y is NR<sub>3</sub>R<sub>4</sub>;

with the proviso that least one of  $R_1$ ,  $R_3$  and  $R_4$  is other than H, and if  $R_3$  and  $R_4$  are both H and  $R_1$  is  $-C(O)R_6$ ,  $-C(O)OR_6$  or  $-C(O)NHR_6$ , then  $R_6$  is other than H; or a pharmaceutically acceptable salt thereof.

25. (Previously Presented): A method according to claim 24, wherein  $R_2$  is of the formula:

$$O = N R_3 R_4$$

$$R_5$$

26. (Previously Presented): A method of treating a patient with cancer comprising: determining that a compound does not enter cancer cells predominately by nucleoside or nucleobase transporter proteins; and administering said compound to said patient; wherein said compound is a compound according to the formula:

wherein:

 $R_1$  is H;  $C_{1-24}$  alkyl;  $C_{2-24}$  alkenyl;  $C_{6-24}$  aryl;  $C_{5-20}$  heteroaromatic ring;  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N, or S;  $-C(O)R_6$ ;  $-C(O)NHR_6$ ; or an amino acid radical or dipeptide or tripeptide chain or mimetic thereof wherein the amino acid radicals are selected from the group comprising Glu, Gly, Ala, Val, Leu, Ile, Pro, Phe, Tyr, Trp, Ser, Thr, Cys, Met, Asn and Gln, and which in each

case is optionally terminated by -R<sub>7</sub>;

 $R_1$  can also be a P(O)(OR')<sub>2</sub> group wherein R' is in each case independently H,  $C_{1-24}$  alkyl,  $C_{2-24}$  alkenyl,  $C_{6-24}$  aryl,  $C_{7-24}$  arylmethyl,  $C_{2-17}$  acyloxymethyl,  $C_{3-8}$  alkoxycarbonyloxymethyl,  $C_{3-8}$  S-acyl-2-thioethyl, saleginyl, t-butyl, phosphate or diphosphate;

R<sub>1</sub> can also be monophosphate, diphosphate, triphosphate or mimetics thereof;

 $R_2$  is

$$R_3$$
  $R_4$   $R_5$   $R_5$   $R_5$ 

 $R_3$  and  $R_4$  are in each case independently H;  $C_{1-24}$  alkyl;  $C_{2-24}$  alkenyl;  $C_{6-24}$  aryl;  $C_{5-24}$  heteroaromatic ring;  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N, or S;  $-C(O)R_6$ ;  $-C(O)OR_6$ ;  $-C(O)NHR_6$ ; or an amino acid radical or dipeptide or tripeptide chain or mimetic thereof wherein the amino acid radicals are selected from the group comprising Glu, Gly, Ala, Val, Leu, Ile, Pro, Phe, Tyr, Trp, Ser, Thr, Cys, Met, Asn and Gln, and which in each case is optionally terminated by  $-R_7$ ;

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 $R_6$  is, in each case, H,  $C_{1-24}$  alkyl,  $C_{2-24}$  alkenyl,  $C_{0-20}$  alkyl- $C_{6-24}$  aryl,  $C_{0-20}$ 

alkyl- $C_{5-20}$ heteroaromatic ring,  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N or S;

 $R_7$  is, in each case,  $C_{1-24}$  alkyl,  $C_{2-24}$  alkenyl,  $C_{6-24}$  aryl,  $C_{5-20}$  heteroaromatic ring,  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N or S,  $-C(O)R_6$ ,  $-C(O)OR_6$ ; and

X and Y are each independently Br, Cl, I, F, OH, OR<sub>3</sub> or NR<sub>3</sub>R<sub>4</sub> and at least one of X and Y is NR<sub>3</sub>R<sub>4</sub>; or a pharmaceutically acceptable salt thereof.

- 27. (Previously Presented): A method according to claim 26, wherein at least one of  $R_1$ ,  $R_3$  and  $R_4$  is other than H, and if  $R_3$  and  $R_4$  are both H and  $R_1$  is  $-C(O)R_6$ ,  $-C(O)OR_6$  or  $-C(O)NHR_6$  then  $R_6$  is other than H.
- 28. (Previously Presented): A method according to claim 27, wherein  $R_2$  is of the formula:

$$NR_3R_4$$
 $R_5$ 

- 29. (Presently Amended): A method according to claim <u>48</u> +, wherein said cancer is prostate cancer, colon cancer, lung cancer, melanoma, ovarian cancer, renal cancer, breast cancer, lymphoma, pancreatic cancer or bladder cancer.
- 30. (Previously Presented): A method according to claim 48 3, wherein said cancer is leukemia.
- 31. (Presently Amended): A method according to claim  $\underline{48}$  1, wherein at least one of  $R_1$ ,  $R_3$ , or  $R_4$  is piperazinyl, piperidinyl, morpholinyl, pyrrolidinyl, adamantyl or quinuclidinyl.

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- 32. (Presently Amended): A method according to claim 48 1, wherein at least one of R<sub>1</sub>, R<sub>3</sub> or R<sub>4</sub> is acetyl, propionyl, butyryl, valeryl, caprioic, caprylic, capric, lauric, myristic, palmitic, stearic, oleic, linoleic, or linolenic.
- 33. (Presently Amended): A method according to claim 48 4, wherein at least one of R<sub>1</sub>, R<sub>3</sub> or R<sub>4</sub> is cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, napthyl or biphenyl.
- 34. (Presently Amended): A method according to claim 48 1, wherein at least one of R<sub>1</sub>, R<sub>3</sub> or R<sub>4</sub> contains a heterocyclic group selected from the following group: furyl, thiophenyl, pyrrolyl, imidazolyl, pyrazoyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, pyridyl, pyrimidinyl, triazolyl, tetrazolyl, oxadiazolyl, thiadiazolyl, thiopyranyl, pyrazinyl, benzofuryl, benzothiophenyl, indolyl, benzimidazolyl, benzopyrazolyl, benzoxazolyl, benzisoxazolyl, benzothiazolyl, benzisothiazolyl, benzoxadiazolyl, quinolinyl, isoquinolinyl, carbazolyl, acridinyl, cinnolinyl and quinazolinyl.
- 35. (Presently Amended): A method according to claim 48 4, wherein said compound is administered at least daily for a period of 2 to 10 days every 2 to 5 weeks.
- 36. (Presently Amended): A method according to claim <u>48</u> 1, wherein said compound is administered at least daily for a period of 2 to 10 days every 3 to 4 weeks.
- 37. (Presently Amended): A method according to claim <u>48</u> 1, wherein said compound is administered at least daily for 3 to 7 days every 2 to 5 weeks.
- 38. (Presently Amended): A method according to claim <u>48</u> 1, wherein said compound is administered at least daily 4 to 6 days every 2 to 5 weeks.
  - 39. (Presently Amended): A compound having the following formula:

$$R_1O$$
 $R_2$ 
 $R_1O$ 
 $R_2$ 
 $R_2$ 

wherein:

 $R_1$  is H;  $C_{1-20}$  alkyl;  $C_{2-20}$  alkenyl;  $C_{6-10}$  aryl;  $C_{5-10}$  heteroaromatic ring;  $C_{1-24}$  alkyl;  $C_{2-24}$  alkenyl;  $C_{6-24}$  aryl; trityl;  $C_{6-24}$  aryl- $C_{1-24}$ -alkyl;  $C_{6-24}$  aryl- $C_{2-24}$ -alkenyl;  $C_{5-20}$  heteroaromatic ring;  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N, or S;  $-C(O)R_6$ ;  $-C(O)OR_6$ ;  $-C(O)NRH_6$   $C(O)NHR_6$ ; or an amino acid radical or dipeptide or tripeptide chain or mimetic thereof, wherein the amino acid radicals are selected from the group comprising Glu, Gly, Ala, Val, Leu, Ile, Pro, Phe, Tyr, Trp, Ser, Thr, Met, Cys, Asn and Gln, and which in each case is optionally terminated by  $-R_7$ ;

 $R_1$  can also be a P(O)(OR')<sub>2</sub> group wherein R' is in each case independently H,  $C_{1-20}$  alkyl,  $C_{2-20}$  alkenyl,  $C_{6-10}$  aryl,  $C_{7-11}$  arylmethyl,  $C_{2-7}$  acyloxymethyl,  $C_{1-24}$  alkyl,  $C_{2-24}$  alkenyl,  $C_{6-24}$  aryl,  $C_{7-18}$  arylmethyl,  $C_{2-18}$  acyloxymethyl,  $C_{3-8}$  alkoxycarbonyloxymethyl,  $C_{3-8}$  S-acyl-2-thioethyl, saleginyl, t-butyl, phosphate or diphosphate;

R<sub>1</sub> can also be monophosphate, diphosphate, triphosphate or mimetics thereof;

 $R_2$  is

$$\begin{array}{c|c} & & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & &$$

 $R_3$  and  $R_4$  are in each case independently H;  $C_{1-20}$  alkyl;  $C_{2-20}$  alkenyl;  $C_{6-10}$  aryl;  $C_{5-10}$  heteroaromatic ring;  $C_{1-24}$  alkyl;  $C_{2-24}$  alkenyl;  $C_{6-24}$  aryl;  $C_{6-24}$  aryl- $C_{1-24}$ -alkyl;  $C_{6-24}$ -aryl- $C_{2-24}$ -alkyl;  $C_{6-24}$ -aryl- $C_{2-24}$ -alkenyl;  $C_{5-18}$  heteroaromatic ring;  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N, or S;  $-C(O)R_6$ ;  $-C(O)NRH_6$ - $-C(O)NHR_6$ ; or an amino acid radical or dipeptide or tripeptide chain or mimetic thereof wherein the amino acid radicals are selected from the group comprising Glu, Gly, Ala, Val, Leu, Ile, Pro, Phe, Tyr, Trp, Ser, Thr, Cys, Met, Asn and Gln, and which in each case is optionally terminated by  $-R_7$ ;

## $R_3$ and $R_4$ together can also be =CH-N( $C_{1-4}$ -alkyl)<sub>2</sub>;

## $R_5$ is H;

 $R_6$  is, in each case, H,  $C_{1-20}$  alkyl,  $C_{2-20}$  alkenyl,  $C_{0-20}$  alkyl- $C_{6-10}$  aryl,  $C_{0-20}$  alkyl- $C_{5-10}$  heteroaromatic ring,  $C_{1-24}$  alkyl,  $C_{2-24}$  alkenyl,  $C_{0-24}$  alkyl- $C_{6-24}$  aryl,  $C_{0-20}$  alkyl- $C_{5-20}$  heteroaromatic ring,  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N or S; and

R<sub>7</sub> is, in each case,  $C_{1-20}$  alkyl,  $C_{2-20}$  alkenyl,  $C_{6-10}$  aryl,  $C_{5-10}$  heteroaromatic ring,  $C_{1-24}$  alkyl,  $C_{2-24}$  alkenyl,  $C_{6-24}$  aryl,  $C_{5-20}$  heteroaromatic ring,  $C_{3-20}$  nonaromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N or S,  $-C(O)R_6$ ,  $-C(O)OR_6$ ; or and

X and Y are each independently Br, Cl, I, F, OH, OR<sub>3</sub> or NR<sub>3</sub>R<sub>4</sub> and at least one of X and Y is NR<sub>3</sub>R<sub>4</sub>; or

a pharmaceutically acceptable salt thereof;

with the proviso that at least one of R<sub>1</sub>, R<sub>3</sub> and R<sub>4</sub> is

 $C_{7-20}$  alkyl  $C_{7-24}$  alkyl;

C<sub>7-20</sub> alkenyl C<sub>7-24</sub> alkenyl;

 $C_{6-10}$  aryl  $C_{6-24}$  aryl;

C<sub>5-10</sub> heteroaromatic ring C<sub>5-20</sub> heteroaromatic ring;

 $C_{4-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N, or S;

 $C(O)R_6$  in which  $R_6$  is  $\frac{C_{7-20}}{C_{7-20}}$  alkyl,  $\frac{C_{7-20}}{C_{7-20}}$  alkyl,  $\frac{C_{0-20}}{C_{0-24}}$  alkyl,  $\frac{C_{0-20}}{C_{0-24}}$  alkyl,  $\frac{C_{0-24}}{C_{0-24}}$  alkyl,  $\frac{C_{0-24}}{C_{0-24}}$  alkyl- $\frac$ 

-C(O)OR<sub>6</sub> in which R<sub>6</sub> is  $C_{7-20}$  alkyl,  $C_{7-20}$  alkenyl,  $C_{0-20}$  alkyl- $C_{6-10}$  aryl,  $C_{0-20}$  alkyl- $C_{5-10}$  heteroaromatic ring,  $C_{4-20}$   $C_{7-24}$  alkyl,  $C_{7-24}$  alkenyl,  $C_{0-24}$  alkyl- $C_{6-24}$  aryl,  $C_{0-24}$  alkyl- $C_{5-20}$  heteroaromatic ring,  $C_{3-20}$ non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N or S; or

a dipeptide or tripeptide or mimetic thereof where the amino acid radicals are selected from the group comprising Glu, Gly, Ala, Val, Leu, Ile, Pro, Phe, Tyr, Trp, Ser, Thr, Cys, Met, Asn and Gln, and which is optionally terminated by -R<sub>7</sub>; and

wherein said compound is not 1-[2-benzoyloxymethyl-1,3-dioxolan-4-yl]cytosine.

- 40. (Previously Presented): A method of treating a patient with cancer comprising administering to said patient a prodrug form of troxacitabine, having a lipophilic structure to enhance entry of the prodrug into the cancer cells by passive diffusion, wherein said lipophilic structure is cleavable by cellular enzymes, thereby increasing the amount of troxacitabine within the cancer cells to a level greater than that allowable by administration of troxacitabine in nonprodrug form.
- 41. (Previously Presented): A method of treating a patient having cancer which is resistant to gemcitabine, cytarabine or both, comprising administering to said patient a troxacitabine derivative having a lipophilic structure which enhances the entry of the derivative into the cancer cell by the passive diffusion.
- 42. (Previously Presented): A method of treating a patient having cancer wherein the cancer cells are deficient in nucleoside or nucleobase transporter proteins, comprising administering to said patient a troxacitabine derivative having a lipophilic structure which enhances entry of the derivative into the cancer cells by passive diffusion.
- 43. (Previously Presented): A method according to claim 42, wherein said cancer cells are deficient in one or more nucleobase transporter proteins.
- 44. (Presently Amended): A method according to claim 48 1, wherein the compound is of the formulas

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45. (Presently Amended): A method according to claim 48 1, wherein the compound is of the formula

46. (Presently Amended): A method according to claim 48 1, wherein the compound is of the formula

47. (Presently Amended): A method according to claim <u>48</u> 1, wherein <u>said</u> the compound is selected from:

4-HEXYL-BENZOIC ACID 4 (4-AMINO-2-OXO-2H-PYRIMIDIN-1-YL)-[1,3]DIOXOLAN 2-YLMETHYL ESTER;

8-PHENYL-OCTANOIC ACID [1-(2-HYDROXYMETHYL-[1,3]DIOXOLAN-4-YL)-2-OXO-1,2-DIHYDRO-PYRIMIDIN-4-YL]-AMIDE;

8-PHENYL-OCTANOIC ACID 4 (4 AMINO 2 OXO-2H-PYRIMIDIN 1-YL) [1,3] DIOXOLAN 2-YLMETHYL ESTER;

4 PENTYL BICYCLO[2.2.2]OCTANE-1 CARBOXYLIC-ACID 4 (4 AMINO 2 OXO-2H-PYRIMIDIN-1-YL)-[1,3]DIOXOLAN-2-YLMETHYL ESTER;

4 PENTYL CYCLOHEXANECARBOXYLIC ACID 4 (4 AMINO 2 OXO 2H-PYRIMIDIN 1 YL) [1,3]DIOXOLAN 2 YLMETHYL ESTER;

4-hexyl-benzoic acid 4-(4-amino-2-oxo-2H-pyrimidin-1-yl)-[1,3]dioxolan-2-yl methyl ester; 8-phenyl-octanoic acid [1-(2-hydroxymethyl-[1,3]dioxolan-yl)-2-oxo-1,2-dihydro-pyrimidin-4-yl]-amide;

8-phenyl-octanoic acid 4-(4-amino-2-oxo-2H-pyimidin-1-yl)-[1,3] dioxolan-2-yl methyl ester;

4-pentyl-bicyclo[2.2.2]octane-1-carboxylic acid 4-(4-amino-2-oxo-2H-pyrimidin-1-yl)-[1,3]dioxolan-2-yl methyl ester;

4-pentyl-cyclohexane-carboxylic acid 4-(4-amino-2-oxo-2H-pyrimidin-1-yl)-[1,3]dioxolan-2-yl methyl ester;

or and mixtures thereof.

- 48. (Previously Presented): A method of treating a patient having a cancer comprising administering to said patient a compound according to claim 39.
- 49. (Previously Presented): A compound according to claim 39, wherein if  $R_3$  and  $R_4$  are both H and  $R_1$  is  $-C(O)R_6$ ,  $-C(O)OR_6$  or  $-C(O)NHR_6$ , then  $R_6$  is other than H.
  - 50. (Cancelled):
- 51. (Previously Presented): A compound according to claim 39, wherein at least one of R<sub>1</sub>, R<sub>3</sub>, or R<sub>4</sub> is piperazinyl, piperidinyl, morpholinyl, pyrrolidinyl, adamantyl or quinuclidinyl.
- 52. (Previously Presented): A compound according to claim 39, wherein at least one of R<sub>1</sub>, R<sub>3</sub> or R<sub>4</sub> is acetyl, propionyl, butyryl, valeryl, caprioic, caprylic, capric, lauric, myristic, palmitic, stearic, oleic, linoleic, or linolenic.

- 53. (Previously Presented): A compound according to claim 39, wherein at least one of R<sub>1</sub>, R<sub>3</sub> or R<sub>4</sub> is cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, napthyl or biphenyl.
- 54. (Previously Presented): A compound according to claim 39, wherein at least one of R<sub>1</sub>, R<sub>3</sub> or R<sub>4</sub> contains a heterocyclic group selected from the following group:

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furyl, thiophenyl, pyrrolyl, imidazolyl, pyrazoyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, pyridyl, pyrimidinyl, triazolyl, tetrazolyl, oxadiazolyl, thiadiazolyl, thiopyranyl, pyrazinyl, benzofuryl, benzothiophenyl, indolyl, benzimidazolyl, benzopyrazolyl, benzoxazolyl, benzisoxazolyl, benzisothiazolyl, benzisothiazolyl, benzoxadiazolyl, quinolinyl, isoquinolinyl, carbazolyl, acridinyl, cinnolinyl and quinazolinyl.

55. (Previously Presented): A compound according to claim 39, wherein the compound is of the formulas

$$\begin{array}{c|c} R & O & O & O \\ \hline O & O & N & N \\ O & O & NH_2 \end{array}$$

56. (Previously Presented): A compound according to claim 39, wherein the compound is of the formula

57. (Previously Presented): A compound according to claim 39, wherein the compound is of the formula

58. (Presently Amended): A compound according to claim 39, wherein <u>said</u> the compound is selected from:

4 HEXYL BENZOIC ACID 4 (4 AMINO 2 OXO 2H PYRIMIDIN 1 YL) [1,3]DIOXOLAN 2 YLMETHYL ESTER;

8-PHENYL-OCTANOIC ACID [1-(2-HYDROXYMETHYL-[1,3]DIOXOLAN-4-YL)-2-OXO-1,2-DIHYDRO-PYRIMIDIN-4-YL] AMIDE;

8-PHENYL-OCTANOIC ACID 4 (4 AMINO 2-OXO 2H-PYRIMIDIN 1-YL) [1,3] DIOXOLAN 2-YLMETHYL ESTER;

4-PENTYL BICYCLO[2.2.2]OCTANE-1-CARBOXYLIC ACID 4-(4-AMINO-2-OXO-2H-PYRIMIDIN-1-YL) [1,3]DIOXOLAN-2-YLMETHYL ESTER;

4-PENTYL-CYCLOHEXANECARBOXYLIC ACID 4-(4-AMINO-2-OXO-2H-PYRIMIDIN-1-YL)-[1,3]DIOXOLAN-2-YLMETHYL ESTER;

4-hexyl-benzoic acid 4-(4-amino-2-oxo-2H-pyrimidin-1-yl)-

## [1,3]dioxolan-2-yl methyl ester;

8-phenyl-octanoic acid [1-(2-hydroxymethyl-[1,3]dioxolan-yl)-2-oxo-1,2-dihydro-pyrimidin-4-yl]-amide;

8-phenyl-octanoic acid 4-(4-amino-2-oxo-2H-pyimidin-1-yl)-[1,3] dioxolan-2-yl methyl ester;

4-pentyl-bicyclo[2.2.2]octane-1-carboxylic acid 4-(4-amino-2-oxo-2H-pyrimidin-1-yl)-[1,3]dioxolan-2-yl methyl ester;

4-pentyl-cyclohexane-carboxylic acid 4-(4-amino-2-oxo-2H-pyrimidin-1-yl)-[1,3]dioxolan-2-yl methyl ester;

or and mixtures thereof.

59. (Previously Presented): A compound according to claim 39, wherein the compound is

60. (Previously Presented): A compound according to claim 39, wherein the compound is

- 61. (Presently Amended): A compound according to claim 39, wherein the compound is Octadec-9-enoic acid[1-(2-hydroxymethyl-[1,3]dioxolan-4-yl)-2-oxo-1,2-dihydro-pyrimidin-4-yl]-amide octadec-9-enoic acid[1-(2-hydroxymethyl-[1,3]dioxolan-4-yl)-2-oxo-1,2-dihydro-pyrimidin-4-yl]-amide.
  - 62. (New): A compound according to claim 39, wherein

 $R_1$  is H;  $C_{1-20}$  alkyl;  $C_{2-20}$  alkenyl;  $C_{6-10}$  aryl;  $C_{5-10}$  heteroaromatic ring;  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N, or S;  $-C(O)R_6$ ;  $-C(O)OR_6$ ;  $-C(O)NHR_6$ ; or an amino acid radical or dipeptide or tripeptide chain wherein the amino acid radicals are selected from the group comprising Glu, Gly, Ala, Val, Leu, Ile, Pro, Phe, Tyr, Trp, Ser, Thr, Met, Cys, Asn and Gln, and which in each case is optionally terminated by  $-R_7$ ;

 $R_1$  can also be a P(O)(OR')<sub>2</sub> group wherein R' is in each case independently H,  $C_{1-20}$  alkyl,  $C_{2-20}$  alkenyl,  $C_{6-10}$  aryl,  $C_{7-11}$  arylmethyl,  $C_{2-7}$  acyloxymethyl,  $C_{3-8}$  alkoxycarbonyloxymethyl,  $C_{3-8}$  S-acyl-2-thioethyl, saleginyl, t-butyl, phosphate or diphosphate;

R<sub>1</sub> can also be monophosphate, diphosphate, triphosphate or mimetics thereof;

 $R_3$  and  $R_4$  are in each case independently H;  $C_{1-20}$  alkyl;  $C_{2-20}$  alkenyl;  $C_{6-10}$  aryl;  $C_{5-10}$  heteroaromatic ring;  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N, or S;  $-C(O)R_6$ ;  $-C(O)OR_6$ ;  $-C(O)NRH_6$ ; or an amino acid radical or dipeptide or tripeptide chain or mimetic thereof wherein the amino acid radicals are selected

from the group comprising Glu, Gly, Ala, Val, Leu, Ile, Pro, Phe, Tyr, Trp, Ser, Thr, Cys, Met, Asn and Gln, and which in each case is optionally terminated by -R<sub>7</sub>;

 $R_6$  is, in each case, H,  $C_{1-20}$  alkyl,  $C_{2-20}$  alkenyl,  $C_{0-20}$  alkyl- $C_{6-10}$  aryl,  $C_{0-20}$  alkyl- $C_{5-10}$  heteroaromatic ring,  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N or S; and

 $R_7$  is, in each case,  $C_{1-20}$  alkyl,  $C_{2-20}$  alkenyl,  $C_{6-10}$  aryl,  $C_{5-10}$  heteroaromatic ring,  $C_{3-20}$  nonaromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N or S,  $-C(O)R_6$ ,  $-C(O)OR_6$ .

- 63. (New): A compound according to claim 39, wherein  $R_3$  and  $R_4$  are each H or  $R_3$  and  $R_4$  together can also be =CH-N( $C_{14}$ -alkyl)<sub>2</sub>.
  - 64. (New): A compound according to claim 39, wherein R<sub>3</sub> and R<sub>4</sub> are each H.
- 65. (New): A compound according to claim 39, wherein at least two of  $R_1$ ,  $R_3$  and  $R_4$  are each H.
- 66. (New): A compound according to claim 39, wherein  $R_1$  is  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N, or S.
- 67. (New): A compound according to claim 39, wherein  $R_1$  is -C(O)OR<sub>6</sub> and  $R_6$  is in  $C_{1-20}$  alkyl or  $C_{2-20}$  alkenyl.
- 68. (New): A compound according to claim 64, wherein  $R_1$  is -C(O)OR<sub>6</sub> and  $R_6$  is in  $C_{1-20}$  alkyl or  $C_{2-20}$  alkenyl.
  - 69. (New): A compound according to claim 64, wherein at least one of R<sub>1</sub>, R<sub>3</sub> and R<sub>4</sub>

is  $-C(O)OR_6$  and  $R_6$  is in  $C_{1-20}$  alkyl or  $C_{2-20}$  alkenyl.

- 70. (New): A compound according to claim 64, wherein at least one of  $R_3$  and  $R_4$  is  $-C(O)OR_6$  and  $R_6$  is in  $C_{1-20}$  alkyl or  $C_{2-20}$  alkenyl.
- 71. (New): A compound according to claim 39, wherein  $R_1$  is  $C_{5-10}$  heteroaromatic ring;  $C_{3-20}$  non-aromatic ring optionally containing 1-3 heteroatoms selected from the group comprising O, N, or S.
  - 72. (New): A compound according to claim 66, wherein  $R_3$  and  $R_4$  are each H.
  - 73. (New): A compound according to claim 71, wherein R<sub>3</sub> and R<sub>4</sub> are each H.